

ABSTRACT

An object of the invention is to credibly crystallize an amorphous material for use as a semiconductor material and effect crystallization to a region of desired scope. A first region drawn on a surface of a layer of amorphous material formed on the surface layer of sample (21) is irradiated with laser beam to thereby effect melting, solidification and crystallization of the amorphous material. A second region drawn on the surface of the layer of amorphous material so as to partially overlap the first region is determined, and the second region is irradiated with laser beam to thereby melt the amorphous material within the second region. At the time of solidification of the molten amorphous material, epitaxial growth with the use of the crystal of the first region as a seed crystal is carried out to thereby attain crystallization. Shifting of the first and second regions to be irradiated with laser beam on the surface of the layer of amorphous material and irradiation with laser beam are repeated until the region of crystallization of the amorphous material reaches a desired scope.